

ABSTRACT OF THE DISCLOSURE

Systems and apparatus are described for modifying fluid flow in a hard disk drive system to reduce cross-track motion. The systems and methods provide advantages because they include at least one flow modification element. In some embodiments, the flow modification system comprises a set of approximately parallel combs occupying a portion of the space present in between the disks in the hard disk drive system. The combs change the flow pattern of the fluid and act as a momentum channeling mechanism relative to the actuator assembly and suspension assemblies resulting in a considerable reduction in track misregistration error. Various embodiments of the invention include baffle-integrated combs, fixture-integrated combs, contoured enclosure surfaces, and enclosure attached combs.